EMBEDDED SERVO PATTERNING METHODS AND APPARATUS

## ABSTRACT OF THE DISCLOSURE

The present invention involves a recordable disk having a first plurality of $S_1$ servo sample wedges in a first servo zone at an outermost position on the disk, a second plurality of $S_2$ servo sample wedges in a second servo zone which is radially adjacent the first servo zone, and a third plurality of $S_3$ servo sample wedges in a third servo zone which is radially adjacent the second servo zone. The $S_1$ servo sample wedges of the first plurality are equally spaced apart circumferentially around the disk by a first angle $\theta_1$, the $S_2$ servo sample wedges of the second plurality are equally spaced apart circumferentially around the disk by a second angle $\theta_2 = \theta_1 * N_1$, and the $S_3$ servo sample wedges of the third plurality are equally spaced apart circumferentially around the disk by a third angle $\theta_3 = \theta_2 * N_2$. Advantageously, $S_2 = S_1/N_1$ and $S_3 = S_2/N_2$, the $S_2$ servo sample wedges of the second plurality are in radial alignment with every $N_1$th wedge of the $S_1$ servo sample wedges of the first plurality, and the $S_3$ servo sample wedges of the third plurality are in radial alignment with every $N_2$th wedge of the $S_2$ servo sample wedges of the second plurality. The number of servo samples are increased nearer the outer position of the disk for improved track following without increasing the number of servo samples at the inner position, which would undesirably decrease storage capacity, and no significant changes to servo detection hardware and software are required.